IN THE ABSTRACT

Please cancel the current abstract and insert the following. A marked-up copy showing the changes made to the abstract is attached hereto in Appendix A.

-- An optical system for forming an image of an object. The optical system includes an optical element, which is deformed by the weight thereof, and at least one optical member for preventing a change in optical performance of the optical system due to deformation of the optical element, when the optical element is provided in the optical system. --

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IN THE CLAIMS:

Please CANCEL claims 18-27, 30-32 and 35-37 without prejudice to or disclaimer of their subject matter.

Please AMEND claims 28 and 33, and ADD new claims 38-50 as follows. A marked-up copy of the claims showing the changes made thereto is attached in Appendix A. For the Examiner's convenience, all claims currently pending in this application have been reproduced below:

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28. (Amended) An optical system for forming an image of an object, said optical system comprising:

an optical element, which is deformed by the weight thereof; and

at least one optical member for preventing a change in optical performance of said optical system due to deformation of said optical element, when said optical element is provided in said optical system.

29. An optical system according to claim 28, wherein said at least one optical member has at least one aspherical surface.

33. (Amended) A projection exposure apparatus comprising:

an illumination optical system for illuminating a pattern formed on a mask; and

a projection optical system for projecting the pattern of the mask onto a wafer, said projection optical system including (i) an optical element being deformed by the weight thereof, and (ii) at least one optical member for preventing a change in optical performance of said optical system due to deformation of said optical element, when said optical element is provided in said optical system.

34. A device manufacturing method including a process for transferring, through projection exposure, a pattern of a mask onto a wafer by use of a projection exposure apparatus as recited in claim 33.

Please ADD new claims 38 -50 as follows:

-- 38. An optical system according to claim 28, wherein said optical element is a diffractive optical element.

39. An optical system according to claim 28, wherein said at least one optical member has at least one aspherical surface.

40. An apparatus according to claim 33, wherein said optical element is a diffractive optical element.

41. An apparatus according to claim 33, wherein said at least one optical member has at least one aspherical surface.

42. An optical system, comprising:

an optical element, said optical element being deformed by the weight thereof and having a refractive power; and

at least one optical member for preventing a change in optical performance of said optical system due to deformation of said optical element, when said optical element is provided in said optical system.

43. An optical system according to claim 42, wherein the refractive power is a positive refractive power.

44. An optical system according to claim 42, wherein the refractive power is a negative refractive power.

45. An optical system according to claim 42, wherein said at least one optical member has at least one aspherical surface.

46. An optical system according to claim 45, further comprising a second optical element juxtaposed to said optical element, wherein said at least one aspherical surface is provided on said second optical element.

47. An optical system according to claim 42, wherein said optical element is a diffractive optical element.

48. An optical system according to claim 42, wherein said optical element has a step-like shape.